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## FIELD-DEPENDENCE AND EXTRAVERSION: UNIVARIATE OR MULTIVARIATE RESEARCH ORIENTATION<sup>1</sup>

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*Summary.*—Field-dependence and extraversion have been considered by Eysenck (1967, 1983) to be similar, if not identical, dimensions, whereas Fine (1972a, 1972b, 1983) has found them to be independent, but frequently to interact in a nonlinear fashion. Regardless of who is correct, both viewpoints lead to the expectation that researchers in either area should be concerned with results of research in the other. The expectation was found to be false. On the assumption that Eysenck and Witkin would be cited as "key" references for extraversion and field-dependence, respectively, 2722 journal articles published during calendar years 1986–1990, in which either Eysenck or Witkin was cited at least once, were examined. In only 27 instances (1%) were both key sources cited in the same article. The question is raised as to why so many researchers within each of these important research areas persist with a univariate approach.

Nearly 20 years ago, I published an article in which retrospective analyses of data from several studies were described (Fine, 1972a). The results of the analyses, which dealt with both field-dependence (Witkin, 1964; Witkin, Dyk, Faterson, Goodenough, & Karp, 1962) and extraversion (Eysenck, 1967), indicated that *field-dependent introverts* were more likely to score as neurotic on the neurosis scale of the Maudsley Personality Inventory (Eysenck, 1959) than were persons defined by any other combination of the two dimensions.

In this context (Fine, 1972a), I suggested that, in addition to considering extraversion as a concept representing *strength* of the nervous system (Eysenck, 1967), it might be scientifically useful to consider the field-dependence concept as reflecting *sensitivity* of the nervous system. The sensitivity concept has since been the theoretical basis of several studies (summarized in Fine, 1990).

In the aforementioned retrospective analyses (Fine, 1972a), field-dependence and extraversion were not significantly correlated. A subsequent review of studies in which both dimensions had been used (Fine, 1983) strongly supported the lack of a significant relationship between them. In my judgment, nothing has occurred since 1983 to warrant changing the conclusions of the review. Since the retrospective analyses noted above, a number

<sup>1</sup>The viewpoint and findings in this article are those of the author, and are not official Department of the Army positions, policies or decisions, unless so designated by other official documents. The editorial comments of Mary Z. Mays and John L. Kobrick are gratefully acknowledged, as is the assistance of Sgt. Robert H. Riley with the literature search. Address reprint requests to Dr. B. J. Fine, U.S. Army Research Institute of Environmental Medicine, Natick, MA 01760.

Eysenck or Witkin has been cited at least once, the number of such citations was tallied for the period January 1, 1986 through December 31, 1990. The results are shown in Table 1.

Of the 2722 published articles in which Eysenck or Witkin has been cited at least once during the past five years, in only 27 instances (1%) were *both* authors cited in the same article. Furthermore, of the 27 articles in which both authors were cited, two were my own, and in 22 of the others, emphasis was not on any aspect of a relationship between field-dependence and extraversion.

One can conclude with a reasonable degree of certainty that, at least for the time covered, investigators working with field-dependence have not been concerned about extraversion, and those working with extraversion have not considered field-dependence.

Given the aforementioned reasons for considering both variables in the same study, and the potential rewards for doing so, I wonder why nearly all investigators in either of these two very busy research areas persist with a univariate approach.

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of significant nonlinear interactions between extraversion and field-dependence have been reported (Fine, 1973; Fine & Danforth, 1975; Fine & Kobrick, 1976). Recent unpublished retrospective analyses of previous research (e.g., Fine, 1972b, 1987; Fine & Kobrick, 1978, 1985) also have yielded significant interactions.

In contrast, Eysenck (1967, p. 117; 1982) has expressed an entirely different viewpoint of the relationship between the two dimensions, asserting that they are very similar, if not identical. He pointedly disagreed with my contention that they are separate dimensions (Eysenck, 1983) and has suggested that impulsivity rather than the social component of extraversion may be similar to field-dependence. My own data show no relationship between field-dependence and the impulsivity component of extraversion.

Regardless of which viewpoint is correct, both have been published several times, and, presumably, might have led at least some researchers in either area to consider the results of research in the other.

Reasonable as this may seem, it has been my impression that neither Eysenck's views on this matter nor mine have had any effect whatsoever in stimulating research on the relationship between field-dependence and extraversion.

To establish the correctness of my impression, I first assumed that investigators who publish research about extraversion would cite a key reference by Eysenck in their publications and that those who study field-dependence would refer to a significant aspect of Witkin's work. Then, I examined the extent to which Eysenck or Witkin or both have been cited in the literature.

Using data from the bibliographic service, Institute for Scientific Information "Research Alert," which covers the majority of the psychology journals on a weekly basis, and which is keyed to detect all articles in which

TABLE 1  
NUMBER AND PERCENT OF JOURNAL ARTICLES  
CITING EYSENCK, WITKIN, OR BOTH FOR YEARS 1986-1990

Authors	1986		1987		1988		Totals	
	<i>n</i>	<i>c<sub>0</sub></i>	<i>n</i>	<i>c<sub>0</sub></i>	<i>n</i>	<i>c<sub>0</sub></i>	<i>n</i>	<i>c<sub>0</sub></i>
Eysenck	430	73.8	487	81.0	360	82.2		
Witkin	143	24.5	106	17.6	73	16.7		
Both	10	1.7	8	1.4	5	1.1		
Totals*	583	*	601	*	438	*		
	1989		1990					
Eysenck	458	84.2	461	82.9			2196	80.7
Witkin	84	15.4	93	16.7			499	18.3
Both	2	0.4	2	1.0			27	1.0
Totals*	544	*	556	*			2722	*

\* $\sum c_0 = 100.0$ .

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